

Listing of Claims:

Please amend claims 30 and 35 and add claims 39 and 40. This listing of claims will replace all prior versions, and listings, of claims in the applications:

1-29. (Cancelled)

30. (Currently Amended) An improved apparatus for semiconductor processing, the improvement comprising a helical ribbon electrode, wherein the helical ribbon electrode comprises a compressed ~~cylindrical double helix~~ including a first helix having a plurality of flat concentric spiral coils ~~separated from each other by~~ and a complementary second helix having a sheet of dielectric material overlapping the surface of the flat concentric spiral coils, each said flat concentric spiral coil comprising a ribbon-like form, said ribbon-like form comprising a width and a thickness wherein the width is substantially greater than the thickness, the width lying in a plane that faces another of said plurality of flat concentric spiral coils, and the thickness corresponding to a plane that is substantially parallel to a direction of stacking of said plurality of flat concentric spiral coils.

31-34. (Cancelled)

35. (Currently Amended) An apparatus for semiconductor processing, the apparatus comprising:

- a process chamber;
- a solid state RF plasma generator coupled to the process chamber to excite a processing gas and generate a plasma;
- a controller coupled to the solid state RF plasma generator to pulse the solid state radio frequency plasma generator for each deposited layer; and
- a cylindrical helical ribbon electrode coupled to an output of the solid state radio frequency plasma generator, the cylindrical helical ribbon electrode further comprising:
 - a plurality of spirally-connected ribbon-shaped coils, each said coil having a width and a thickness;

the width substantially greater than the thickness and flat in a dimension facing another of said plurality of spirally-connected ribbon-shaped coils; and
the thickness is substantially perpendicular to the width;
a sheet of dielectric material having a spiral shape complementary to the spirally-connected ribbon-shaped coil and entwined with the spirally-connected ribbon-shaped coil to form a double helix,

wherein the distance between the cylindrical helical ribbon electrode and a sample situated in the process chamber is less than five inches, and

wherein [[a]] the sheet of dielectric material separates adjacent said spirally-connected ribbon-shaped coils so that, when compressed, the adjacent surfaces of the spirally-connected ribbon-shaped coils do not touch.

36. (Previously presented) The apparatus of claim 35 wherein a width of the dielectric sheet is greater than the width of the spirally-connected ribbon-shaped coils.

37. (Cancelled)

38. (Cancelled)

39. (New) The improved apparatus of claim 30, wherein the first helix has three to ten turns.

40. (New) An apparatus for semiconductor processing, the apparatus comprising:
a process chamber;
a tubular dielectric wall defining an outer wall of the process chamber;
a solid state radio frequency (RF) plasma generator coupled to the process chamber to excite a processing gas and generate a plasma;
a controller coupled to the solid state RF plasma generator to pulse the solid state RF plasma generator for each deposited layer; and

a helical ribbon electrode coupled to an output of the solid state RF plasma generator, the helical ribbon electrode encircling the tubular dielectric wall so that the tubular dielectric wall is arranged between the process chamber and the helical ribbon electrode;

wherein each pass of the helical ribbon electrode overlaps a previous pass;

wherein the helical ribbon electrode has a width extending parallel to the tubular dielectric wall and a thickness extending perpendicular to the tubular wall, the width substantially greater than the thickness;

wherein each pass of the helical ribbon electrode overlaps and is generally aligned with a previous pass of the helical ribbon electrode so that a total width of the helical ribbon electrode is substantially the width of a single pass of the helical ribbon electrode.